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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,438	08/03/2001	Timothy L. Minich	GP-301110	6750

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EXAMINER

HARRISON, MONICA D

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,438

Applicant(s)

MINICH ET AL.

Examiner

Monica D. Harrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. What is unique referring to? It is unclear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Muller-Berner. Regarding claim 1, Muller-Berner discloses a target wheel for providing timing information for a crankshaft in the internal combustion engine, the target wheel comprising a substantially circular member having a plurality of teeth, said teeth having variable widths, and said teeth having rising edges distributed in non-uniform fashion and falling edges distributed in uniform fashion, wherein said target wheel provides speed and timing information for multiple internal combustion engine configurations (column 4, lines 5-23).

Regarding claim 6, Muller-Berner discloses a crankshaft coupled to a drive train of the vehicle (Figure 3, reference 5), a sprocket coupled to said crankshaft to drive a camshaft in the vehicle (Figure 3, reference 41) and a target wheel having a plurality of teeth, said teeth having

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variable widths, and rising edges and falling edges, said falling edges irregularly positioned on said target wheel, said rising edges regularly positioned on said target wheel (Figure 3, reference 16); whereby said target wheel provides process data for operation of a plurality of internal combustion engine configurations (column 4, lines 5-23; column 5, lines 57-68; column 6, lines 1-32).

Regarding claim 7, Muller-Berner discloses a cam phaser coupling said crankshaft to said sprocket (column 5, lines 9-44).

Regarding claim 8, Muller-Berner discloses a sensor sensing said irregular surface to provide an electrical output (column 5, lines 57-68; column 6, lines 1-32).

Regarding claim 9, Muller-Berner discloses an electronic controller (column 5, lines 57-68; column 6, lines 1-32).

Regarding claim 10, Muller-Berner discloses electrical output comprises a pulse string (column 5, lines 57-68; column 6, lines 1-32).

Regarding claim 11, Muller-Berner discloses electronic controller includes engine control software (column 5, lines 57-68; column 6, lines 1-63)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

~~14-20~~
Claims 2-5 and 12, ~~20~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over

Muller-Berner (3,682,152) in view of Pouring (4,592,318). Muller Berner discloses a cam

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phaser coupled to said camshaft (column 5, lines 9-44), a sensor sensing said irregular surface to provide an electrical output (column 5, lines 57-68; column 6, lines 1-32), an electronic controller coupled to said sensor to interpret said electrical output to determine speed and position of said camshaft (column 5, lines 57-68; column 6, lines 1-32).

However Muller-Berner does not disclose a plurality of different internal combustion engine configurations is selected from the group comprising four, five, six, eight, ten, and twelve cylinder engines (claims 2 and 12), target wheel includes fifty-eight teeth and a synchronization pulse region (claims 3 and 16), falling edges of said teeth are spaced substantially six degrees apart (claim 4), at least six of said teeth create a unique combination indicating the position of the said target wheel (claim 5), an intake manifold, a throttle plate (claim 13), internal combustion engine is a 4 cycle engine (claim 14), internal combustion engine is a direct injection engine (claim 15), at least six of said teeth create a unique combination, whereby engine synchronization may be determined from said at least six teeth (claim 17).

Pouring discloses plurality of different internal combustion engine configurations is selected from the group comprising four, five, six, eight, ten, and twelve cylinder engines (column 6, lines 17-37; column 10, lines 12-38), target wheel includes fifty-eight teeth and a synchronization pulse region (column 14 lines 20-34), falling edges of said teeth are spaced substantially six degrees apart (column 14, lines 20-57), at least six of said teeth create a unique combination indicating the position of the said target wheel (column 14 lines 20-57), an intake manifold (Figure 3, reference 62), a throttle plate (Figure 3, reference 66), internal combustion engine is a 4 cycle engine (column 1, lines 48-68; column 2, 1-13), internal combustion engine is a direct injection engine (column 7, lines 55-66).

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Regarding claims 3, 4, 16, and 17, as far as the target wheel having fifty-eight teeth and the falling edges of the teeth spaced six degrees apart is simply a design choice.

Since Muller-Berner and Pouring are both from the same field of endeavor, the purpose disclosed by Pouring would have been recognized as pertinent art of Muller-Berner.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Muller-Berner with the teachings of Pouring for the purpose of producing an improved combustion process, improve the efficiency of the engine, and reducing undesirable engine exhaust emissions.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica D. Harrison whose telephone number is 703-305-4758. The examiner can normally be reached on M-F 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on 703-308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7725 for regular communications and 703-305-3839 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.

Monica D. Harrison
AU 2855

mdh
September 26, 2002


ERIC S. McCALL
PRIMARY EXAMINER

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